

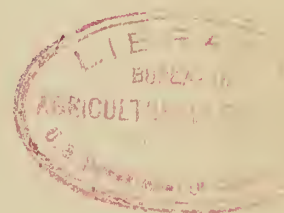
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service

LIQUID EGG PRODUCTION

1938 - 1939



Washington D. C.
August 1940.

PRODUCTION AND UTILIZATION OF LIQUID EGGS - 1938-1939

The production of liquid eggs for commercial purposes by egg breaking plants during 1939 is estimated by the Agricultural Marketing Service at 220,233,000 pounds and that of 1938 at only 148,800,000 pounds. The output for the first 6 months of 1940 is estimated to be of record proportions.

Because of an unusually large carryover of frozen eggs from the 1937 breakings, the 1938 production of liquid eggs was comparatively small. ~~But~~ at the beginning of the 1939 breaking season stocks of frozen eggs had been reduced to a more normal level. The smaller stocks of frozen eggs, combined with an unprecedented heavy shell egg production during the spring laying season, and a rather weak demand for shell eggs for storage, led to an output of liquid eggs in 1939 that was second only to the 235,593,000 pounds produced in 1937. (Agricultural Adjustment Administration estimate)

Stocks of frozen eggs at the beginning of the 1940 egg laying season were even less than those of a year earlier. This situation, together with a liberal rate of lay, low prices for shell eggs, and an indifferent storage demand, resulted in a liquid egg production of record proportions during the first 6 months of 1940. The preliminary estimate is 190,942,000 pounds, an increase of 11 percent over the production of the corresponding 6 months of 1939. With close to average breakings for the remainder of the year, total production for 1940 will probably be the largest for any year in the history of the industry.

Table 1-Production of Liquid Eggs, 1938-1939

	1938		1939	
	Production:	Percent	Production:	Percent
	000 lbs.		000 lbs.	
Frozen	116,100	78	177,144	80
Dried	22,300	15	31,000	14
Immediate Consumption	10,400	7	12,089	6
TOTAL	148,800	100	220,233	100

The major utilization of liquid eggs produced by commercial egg breaking plants showed little change from 1938 to 1939. Of the 1938 production, 116,100,000 pounds, or 78 percent, were frozen and stored for later use, 22,300,000 pounds, or 15 percent, were used for drying, and 10,400,000 pounds, or 7 percent were used currently without freezing or drying. In 1939, 177,144,000 pounds, or 80 percent, were frozen for storage, 31,000,000 pounds, or 14 percent, used for drying, and 12,089,000 pounds, or 6 percent, consumed currently as liquid eggs.

Prepared by R. F. Moore, Asst. Agr. Statistician.
B. H. Bennett, Agr. Statistician.

Production by months: The seasonal production of liquid eggs follows closely the seasonal pattern of shell egg production. Some production was reported for every month of 1938 and 1939 by plants that operated on a year 'round basis, but over 80 percent of the total production of both years was produced during the months of March, April, May and June. This period coincides with the flush period of shell egg production when around 50 percent of the total annual shell egg production is produced.

It is believed that some modification in the seasonal production of liquid eggs has taken place during the past 10 to 15 years. Factual data, however, are not available. The first egg breaking plants were located principally in large assembling and consumption centers, such as New York, Chicago, Philadelphia, Boston, etc. The chief source of supplies for breaking were cracks, dirties, etc., during the spring and summer months, and toward the close of the year surplus shell eggs in storage. Later, as the advantages and economies of using liquid or frozen eggs became more widely known, egg breaking plants were located in the centers of shell egg production throughout the Middle West and became large users of quality eggs in competition with buyers of fresh eggs for current use and storage purposes. Some storage eggs are still broken and frozen when conditions warrant, but the volume so used is small compared with what it was a number of years ago. Therefore a larger proportion of total production of liquid eggs is centered in the flush months of shell egg production.

Table 2-Production by Months

	Production		Percent	
	1938	1939	1938	1939
	000 lbs.	000 lbs.		
January	893	2,202	0.6	1.0
February	5,506	9,470	3.7	4.3
March	27,230	35,898	18.3	16.3
April	39,134	48,231	26.3	21.9
May	35,563	53,737	23.9	24.4
June	25,595	41,404	17.2	18.8
July	8,779	15,857	5.9	7.2
August	3,571	6,606	2.4	3.0
September	893	3,303	0.6	1.5
October	595	1,542	0.4	0.7
November	595	1,102	0.4	0.5
December	446	831	0.3	0.4
TOTAL	148,800	220,233	100.0	100.0

Production by classes: An analysis of the production of liquid eggs in 1938 and 1939 by classes of production showed that approximately 42 percent of the annual production of those years consisted of whole eggs, mixed eggs and mixed emulsions, 31 percent of egg whites, and 27 percent of the various forms of yolk. In separated liquid eggs, the big demand is for yolks, which are used extensively in making mayonnaise, and bakery products such as noodles, cakes, etc. The demand for egg whites has been slow in developing, and as over 50 percent of an egg is made up of albumen, or egg whites, it frequently happens that in order to supply the demand for yolks, the supplies of egg albumen becomes unusually large and difficult to move at any price. At the present time the industry is concentrating on developing new outlets and uses for egg albumen. Some progress has already been

made, and further success will bring about a greater equalization between prices for egg yolks and egg whites through an increase in the price for whites and a decrease in the price for yolks.

Table 3-1938-1939 Production by Classes of Product.

	Production		Percent	
	1938	1939	1938	1939
	000 lbs.	000 lbs.		
Whole	43,450	66,524	29.2	30.2
Plain Mixed	4,910	6,844	3.3	3.1
Mixed Emulsions	14,582	18,514	9.8	8.4
Egg Whites	46,723	68,286	31.4	31.0
Plain Yolk	16,368	27,323	11.0	12.4
Sugared Yolk	14,434	22,918	9.7	10.4
Salted Yolk	8,035	9,484	5.4	4.3
Glycerine Yolk	298	340	0.2	0.2
TOTAL	148,800	220,233	100.0	100.0

Expansion of Industry: The growth in the use of liquid eggs in the United States has been phenomenal. A picture of this growth can be visualized by taking the peak storage holdings of frozen eggs as an index of production for each year since 1916 when the collection of data on storage stocks was first inaugurated. Peak stocks of frozen eggs on the first of August each year cannot be considered without some limitations as an accurate measure of the volume of liquid eggs produced in that year. These stocks are frequently influenced by variation in the supply and demand of shell eggs--sometimes even more so than they are by the variation in the supply and demand for liquid or frozen eggs. Shell eggs in storage cannot be carried over from season to season, and surplus supplies at the end of the storing season frequently cause users of frozen eggs to switch temporarily to shell eggs. But the annual peak stocks of frozen eggs can be used safely over a period of years to indicate the growth, as well as the general rapidity of that growth, of the egg breaking industry. Storage holdings of frozen eggs on August 1, 1916, totaled 5,882,000 pounds. On August 1, 1940, storage holdings of frozen eggs reached 154,929,000 pounds, although the peak of 166,876,000 pounds was established on August 1, 1937.

The growth of egg breaking operations in the United States can be attributed largely to the change during the past two decades from home cooked foods to prepared foods. Commercial manufacturers of bakery goods, salad dressing, candies and other confectioneries, all have become large users of liquid or frozen eggs, and in recent years dried eggs also. They have found that liquid, frozen and dried eggs are much more convenient to use than eggs held in shell form. They can be purchased in any form desired and in quantity for the particular purpose needed. The industry has also contributed much to the growth by improving refrigeration and sanitary measures which have assured the trade of fine quality products at any time throughout the year.

The sharp increase in the production of liquid egg products experienced in the past can hardly be expected in the future, but the trend of production is up. As population increases, larger quantities will be needed. Also, the production of dried egg products is expanding. For many years China has been the chief source of supply of the various classes of dried eggs, but because of war conditions in that country, imports from China have fallen off to very low levels. Once established, it is unlikely that the domestic dried egg industry will return to the low production of past years.

Table 4
Cold Storage Holdings of Frozen Eggs
Percentage That Yolk Holdings Are of the Total

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1925...	29	29	32	28	26	27	26	26	28	25	26	26
1926...	28	28	28	29	27	25	23	20	25	19	18	19
1927...	20	18	17	20	19	20	20	20	20	19	19	18
1928...	18	16	15	14	16	17	17	16	16	16	16	16
1929...	16	16	15	17	20	20	18	18	18	18	18	19
1930...	20	21	22	22	22	21	21	20	20	20	20	21
1931...	20	22	21	20	21	22	22	21	20	21	20	20
1932...	20	19	20	17	18	19	20	19	19	18	18	18
1933...	18	17	16	17	22	22	22	21	21	23	24	22
1934...	23	23	22	24	27	27	26	25	25	25	28	29
1935...	31	32	36	38	33	30	27	25	25	25	25	26
1936...	26	25	24	23	25	26	27	25	24	25	25	25
1937...	26	24	24	25	24	25	26	25	25	25	24	25
1938...	24	24	24	23	24	23	21	21	20	20	20	17
1939...	16	16	14	19	21	23	21	21	21	21	21	22
1940...	21	22	21	22	24	25	24	23				

Table 5 -- Cold Storage Holdings of Frozen Eggs
Percent That Mixed Eggs Are of the Total

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1925...	47	47	44	47	50	47	50	51	57	52	50	51
1926...	48	47	46	45	45	48	51	56	45	56	57	55
1927...	53	52	52	45	50	50	50	49	49	49	47	45
1928...	42	40	37	44	49	52	54	56	57	57	58	56
1929...	54	52	49	44	47	52	57	59	60	60	61	60
1930...	60	59	59	58	53	53	59	61	62	62	63	62
1931...	63	63	65	64	61	58	58	59	60	59	61	61
1932...	61	62	61	64	61	56	52	52	52	52	53	51
1933...	50	49	48	48	42	44	46	48	49	49	48	50
1934...	49	52	53	52	45	44	45	49	49	50	47	47
1935...	47	46	44	41	40	40	43	46	47	47	47	46
1936...	47	48	49	51	46	45	43	46	47	47	47	47
1937...	45	47	48	48	46	44	44	45	47	47	47	47
1938...	47	47	48	47	45	45	48	49	51	51	52	53
1939...	54	57	56	49	45	42	45	46	47	47	47	46
1940...	46	44	44	44	43	44	46					

Table 6
Cold Storage Holdings of Frozen Eggs
Percentage That Albumen (or Whites) Holdings Are of the Total

Year	: : Jan	: : Feb	: : Mar	: : April	: : May	: : June	: : July	: : Aug	: : Sept	: : Oct	: : Nov	: : Dec
1925...	24	24	24	25	24	26	24	23	15	23	24	23
1926...	24	25	26	26	28	27	26	24	30	25	25	26
1927...	27	30	31	35	31	30	30	31	31	32	34	37
1928...	40	44	48	42	35	31	29	28	27	27	26	28
1929...	30	32	36	39	33	28	25	23	22	22	21	21
1930...	20	20	19	20	20	21	20	19	18	18	17	17
1931...	17	15	14	16	18	20	20	20	20	20	19	19
1932...	19	19	19	19	21	25	28	29	29	30	29	31
1933...	32	34	36	35	36	34	32	31	30	28	28	28
1934...	28	25	25	24	28	29	29	26	26	25	25	24
1935...	22	22	20	21	27	30	30	29	28	28	28	28
1936...	27	27	27	26	29	29	30	29	29	28	28	28
1937...	29	29	28	27	30	31	30	30	28	28	29	28
1938...	29	29	28	30	31	32	31	30	29	29	28	30
1939...	30	27	30	32	34	35	34	33	32	32	32	32
1940...	33	34	35	34	33	31	31					

Table 7

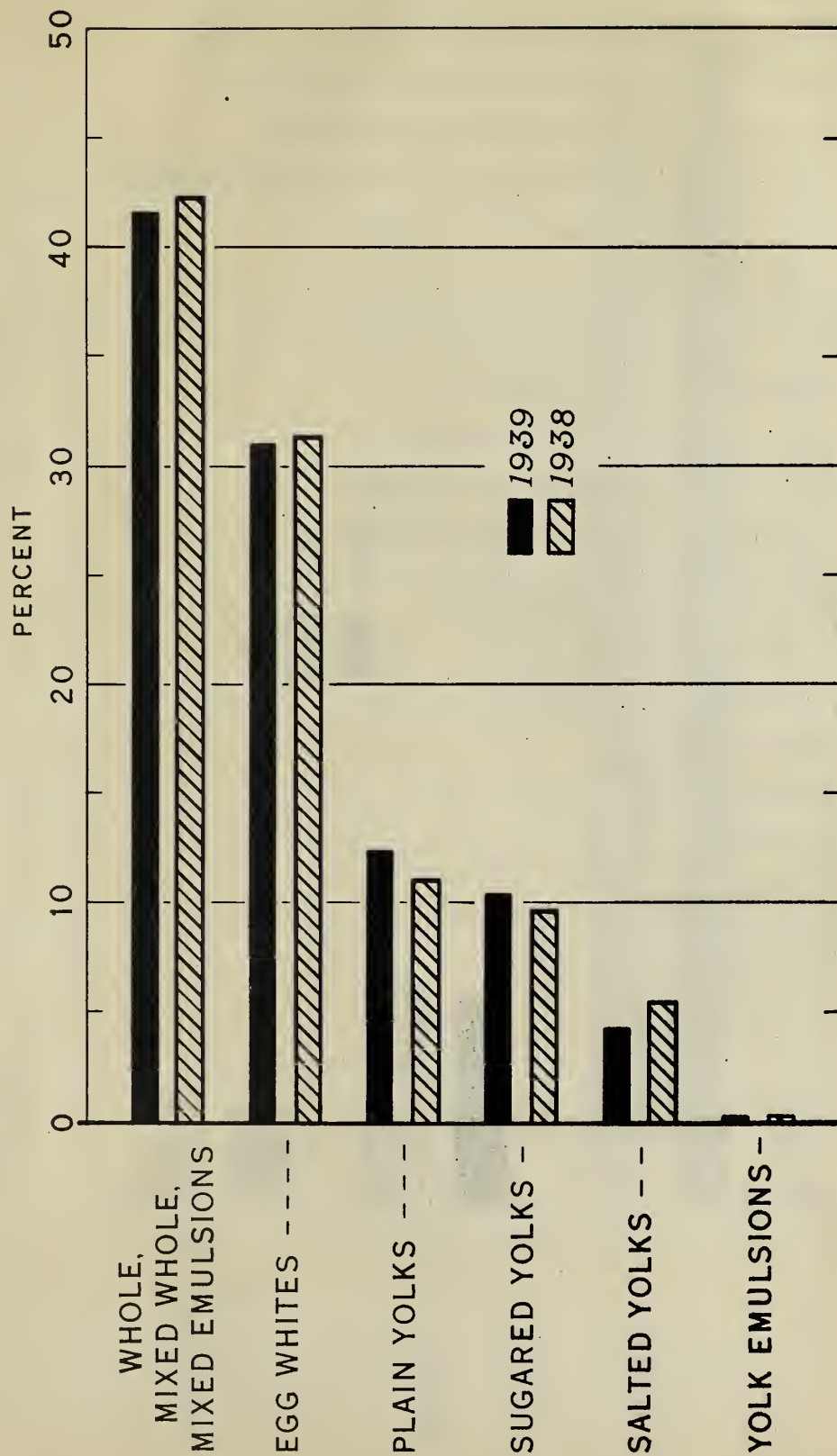
Frozen Eggs - Cold-Storage Holdings in United States, 1917-40
(Thousand pounds, i. e., 000 omitted)

Year	Jan. 1	Feb. 1	Mar. 1	April 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1927-31	54724	47520	40949	46081	64718	84923	94484	97110	95361	88987	79780	71331
1932-36	66076	56249	46687	47633	67196	90588	107845	112019	105722	94527	83076	71583
1933-37	60604	49582	39960	44441	68449	98219	120714	125572	119180	107332	94974	82939
1917	2737	1724	1334	2394	3329	7558	13398	15384	19741	17585	16424	13979
1918	14603	12207	9746	9001	9488	11555	12895	15240	15871	14757	13281	11832
1919	8980	7760	6931	5989	8046	11568	16472	19024	21017	20687	18976	22690
1920	19286	16394	13836	11039	10529	13939	17388	20055	21901	23584	20461	29945
1921	27325	24927	22363	20873	21730	26822	27737	27952	27408	26656	26114	22899
1922	19260	16209	13193	10473	14154	18273	23528	27855	34516	33545	30523	26233
1923	22787	18517	14603	10311	12921	20730	29686	36192	37280	43836	40424	36004
1924	32087	27682	23106	20736	23707	29956	33565	35184	34128	31006	26633	22100
1925	21303	16292	11564	11353	19579	29544	38379	42855	47099	44299	45314	39336
1926	33905	29256	24167	21849	25739	34815	45688	51810	52634	51062	44966	38620
1927	33593	31207	26053	33272	52053	71605	81263	81418	77508	71208	62066	54703
1928	47020	38575	31562	34411	51532	67941	77744	81670	89196	82255	73327	64201
1929	56181	48055	38250	34918	51825	71560	84766	91488	86693	81541	70331	61772
1930	53644	44080	35192	49751	76664	106904	115134	116272	113138	106631	98359	89571
1931	83184	75685	73839	78051	91517	106607	113513	114700	110271	103302	94816	86407
1932	79198	72439	68024	69031	81920	94978	100435	99112	92967	84187	74314	64150
1933	55339	46443	40450	45090	62944	85323	103019	107660	102449	93182	82302	72348
1934	61419	49910	39181	38679	62632	93947	116058	121564	111994	99951	88715	76073
1935	64879	52726	39413	39516	59313	84680	107937	116274	112585	98653	88018	79035
1936	69546	59722	46367	45848	69172	94014	111725	115485	108614	96660	82029	66309
1937	51837	39104	34390	53074	88186	133132	164830	166876	160258	148216	133805	120929
1938	109210	95598	88754	96475	115874	130872	138510	135329	125018	110244	94305	78091
1939	62903	50345	44476	60465	88867	117900	140377	143021	135908	121469	104291	87789
1940	72779	56249	38070	44199	79454	123720	150207	1454929				

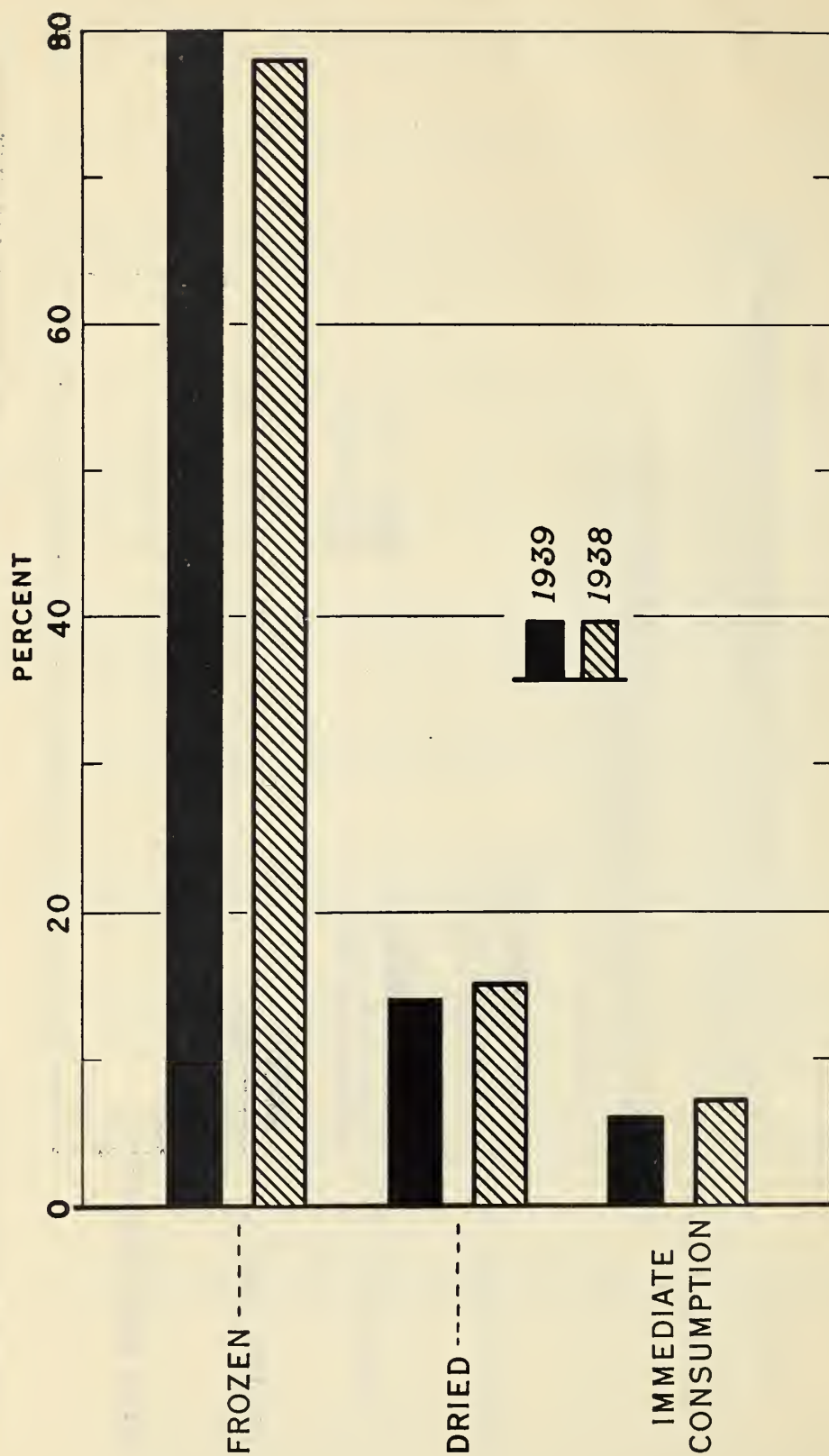
1/ Preliminary

From U. S. D. A. Statistical Bulletin No. 48 and monthly cold storage reports of the Department.

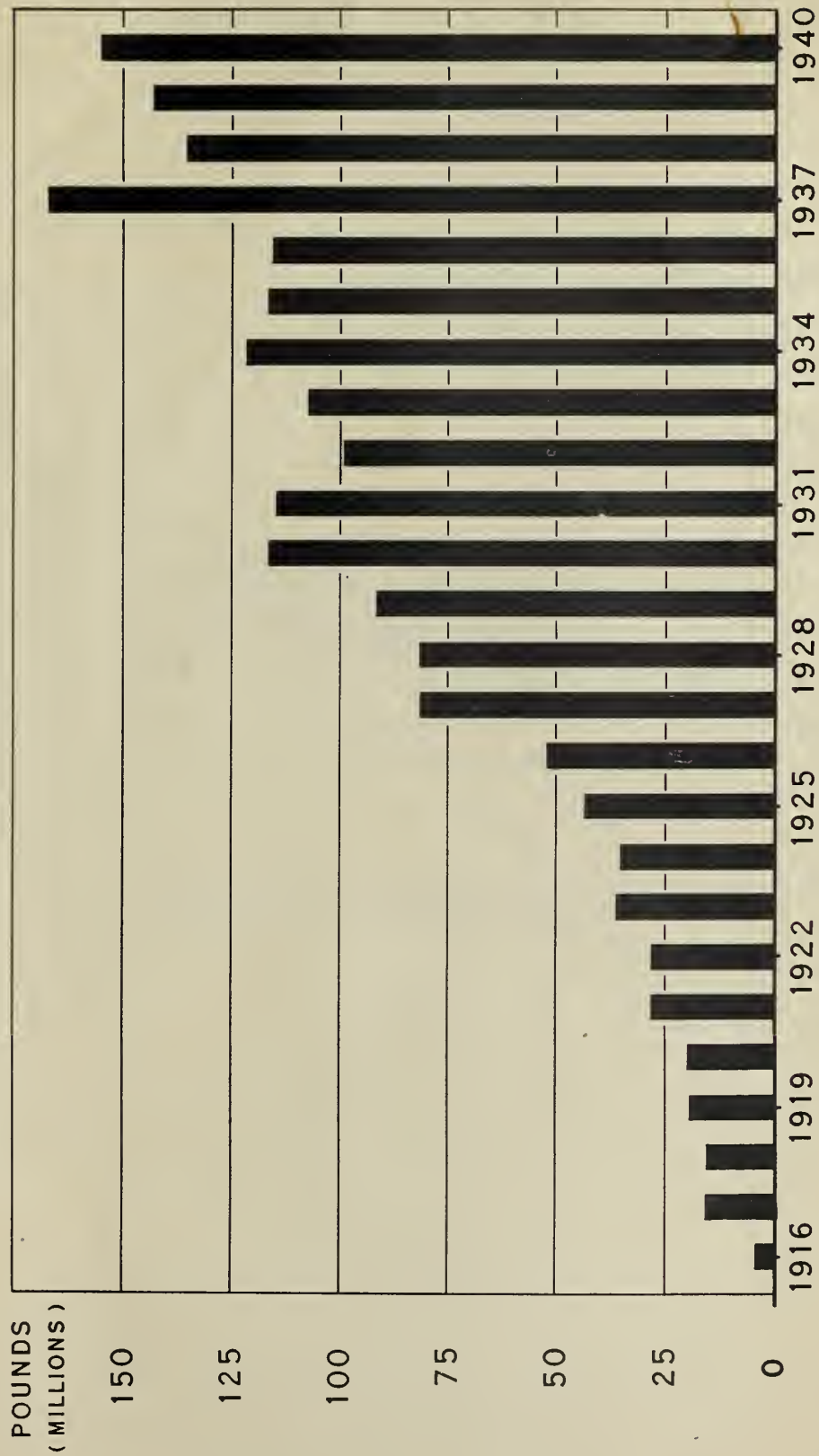
LIQUID EGG PRODUCTION, BY CLASSES, 1938 AND 1939



LIQUID EGG PRODUCTION BY UTILIZATION, 1938 AND 1939



FROZEN EGGS: COLD-STORAGE HOLDINGS, UNITED STATES, AUGUST 1, 1916-40



U. S. DEPARTMENT OF AGRICULTURE

NEG. 270 AGRICULTURAL MARKETING SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
WASHINGTON, D. C.

1939-1940
D 22766
1941



PRODUCTION OF LIQUID EGGS BY
EGG-BREAKING PLANTS, 1939-1940

PRODUCTION OF DRIED-EGGS, 1938-1940

April 1941

PRODUCTION OF LIQUID EGGS
BY EGG-BREAKING PLANTS, 1938-1940

The production of liquid eggs by commercial egg-breaking plants during 1940 is estimated by the Agricultural Marketing Service at 218,311,000 pounds, compared with 203,508,000 pounds in 1939, and 133,946,000 pounds in 1938. 1/ These quantities are equivalent to approximately 6,237,000 cases of shell eggs in 1940, 5,843,000 cases in 1939 and 3,824,000 cases in 1938.

The 1940 egg-breaking season was slow in starting. Severe cold weather in February caused a contra-seasonal rise in egg prices and egg breakers held off full operations until the middle of March. Once full operations got underway, the generally improved business conditions and outlook led to very heavy breakings, particularly during April, May, and June, when shell egg production was the largest of record. Approximately 70 percent of the 1940 output of egg breaking plants was produced during these three months compared with 65 percent during the same period in 1939 and 67 percent in 1938.

Table 1. - PRODUCTION OF LIQUID EGGS, 1938-40

Disposition	1938		1939		1940	
	Production:	Percent:	Production:	Percent:	Production:	Percent:
	1,000 lb.		1,000 lb.		1,000 lb.	
Frozen	116,100	87	177,144	87	189,578	87
For Drying <u>2/</u>	7,446	5	14,275	7	16,089	7
Immediate consumption	10,400	8	12,089	6	12,644	6
Total <u>1/</u>	133,946	100	203,508	100	218,311	100

1/ The estimates for 1938 and 1939 differ from those released in August, 1940, as liquid eggs used for drying by strictly egg drying plants have been omitted.

2/ Does not include production of firms that dry-eggs exclusively.

Storage stocks of frozen eggs on August 1, 1940, totaled 154,929,000 pounds and were the second largest of record for that date, being exceeded only by the holdings on August 1, 1937, which totaled 166,876,000 pounds. The demand for frozen eggs during the 1940-41 out-of-storage season was good, and the large stocks were liquidated without difficulty. The industry started the 1941 egg breaking season with stocks at near-normal levels.

Table 2. PRODUCTION BY MONTHS

	Production			Percent		
	1938	1939	1940	1938	1939	1940
	1,000 lb.	1,000 lb.	1,000 lb.			
January	804	2,034	1,092	.6	1.0	.5
February	4,956	8,746	1,746	3.7	4.3	.8
March	24,512	33,156	33,183	18.3	16.3	15.2
April	35,227	44,546	49,338	26.3	21.9	22.6
May	32,012	49,632	58,944	23.9	24.4	27.0
June	23,039	38,341	45,190	17.2	18.8	20.7
July	7,903	14,645	17,465	5.9	7.2	8.0
August	3,215	6,102	7,204	2.4	3.0	3.3
September	804	3,051	2,401	.6	1.5	1.1
October	536	1,424	655	.4	.7	.3
November	536	1,017	656	.4	.5	.3
December	402	814	437	.3	.4	.2
Total <u>1/</u>	133,946	203,508	218,311	100.0	100.0	100.0

1/ The estimates for 1938 and 1939 differ from those released in August 1940, as liquid eggs used for drying by strictly egg drying plants have been omitted.

The utilization of the output of egg breaking plants has changed very little during the past several years. During 1938, 1939, and 1940, 87 percent of the average production was frozen and stored for later use; from 5 to 7 percent used, sold, or transferred for drying; and 6 to 8 percent used for immediate consumption in liquid form.

Production by classes of products has also shown very little proportional change since 1938. The only change worth mentioning in 1940 is that the production of salted yolks amounted to 7.7 percent of the total production in 1940 compared with 4.5 percent in 1939 and 5.9 percent in 1938. On the average since 1938, approximately 42 percent of the annual production has consisted of whole eggs, mixed eggs, and mixed emulsions, 31 percent of egg whites, and 27 percent of the various forms of yolk.

Table 3. PRODUCTION BY CLASSES OF PRODUCT

	Production			Percent		
	1938	1939	1940	1938	1939	1940
	1,000 lb.	1,000 lb.	1,000 lb.			
Whole	41,212	62,298	64,998	30.8	30.6	29.8
Plain Mixed	4,910	6,844	7,672	3.7	3.4	3.5
Mixed Emulsions	14,582	18,514	17,203	10.9	9.1	7.9
Egg Whites	40,415	62,286	67,466	30.2	30.6	30.9
Plain Yolk	10,060	20,824	22,275	7.5	10.2	10.2
Sugared Yolk	14,434	22,918	21,777	10.8	11.4	9.9
Salted Yolk	8,035	9,484	16,737	5.9	4.5	7.7
Glycerine Yolk	298	340	183	.2	0.2	.1
Total 1/	133,946	203,508	218,311	100.0	100.0	100.0

1/ Estimates for 1938 and 1939 figures differ from those released in August 1940, as liquid eggs used for drying by strictly egg drying plants have been omitted.

DRIED EGG PRODUCTION, 1939-1940

Dried egg production in 1940 is estimated at 7,487,000 pounds, composed of 392,000 pounds of dried whole eggs, 1,916,000 pounds of dried albumen, and 5,179,000 pounds of dried yolk. This production was the second largest of record, being exceeded only by the record production of 10,039,000 pounds in 1939. To produce these quantities of dried egg products, approximately 1,072,000 cases of shell eggs were used in 1939 and 758,000 cases in 1940. Because the demand or requirements for dried yolk and dried albumen varies from year to year, there is generally a surplus of either liquid yolk or albumen which is not dried. For example, to get the required amount of liquid yolk to produce 7,550,000 pounds of dried yolk in 1939 over 3,000,000 pounds of liquid albumen was produced in excess of the amount used for drying. In 1940, however, the drying of liquid yolk and albumen was almost in direct proportion with only 382,000 pounds of liquid albumen produced in excess of the amount dried. Ordinarily, the surplus liquid yolk or albumen produced from egg drying operations is frozen.

Table 4.

ESTIMATED U. S. PRODUCTION OF DRIED-EGG PRODUCTS

Year	Whole	Albumen	Yolk	Total
	<u>1,000 lb.</u>	<u>1,000 lb.</u>	<u>1,000 lb.</u>	<u>1,000 lb.</u>
1927	161	0	395	556
1928	0	3	215	218
1929	3	10	189	203
1930	7	0	482	489
1931	73	2	478	553
1932	15	402	1,869	2,286
1933	133	1,487	2,171	3,796
1934	204	1,428	2,568	4,300
1935	61	133	2,806	3,000
1936	126	267	1,093	1,486
1937	74	541	1,776	2,391
1938	179	1,510	4,313	6,002
1939	184	2,305	7,550	10,039
1940	392	1,916	5,179	7,487

Since 1938, the egg-drying industry in the United States has been greatly stimulated by the sharp falling off of imports of dried-egg products from China, previously the chief source of supply of dried-egg products. During 1929, 1930, and 1931, imports averaged over 10 million pounds annually, but with an increase in the tariff from 18 cents per pound to 27 cents per pound on July 24, 1931, imports dropped sharply. During the depression years, when low egg prices enabled domestic driers to compete on a more equal cost basis with the Chinese product, imports continued relatively small, averaging less than 3 million pounds annually during the years 1932, 1933, and 1934. But in 1935, rising egg prices began to slow up the expansion of the domestic egg-drying industry; imports began to increase once more, and for the year totaled 6,431,000 pounds. In 1937 -- the last normal year for China -- United States imports of dried eggs from China totaled 8,871,000 pounds. But following the invasion of China by the Japanese normal production and trading activities were seriously disrupted and Chinese exports of dried eggs to the United States in 1939 totaled only 1,245,000 pounds.

Table 5.

IMPORTS OF DRIED EGG PRODUCTS

Year	Whole	Albumen	Yolk	Total
	<u>1,000 lb.</u>	<u>1,000 lb.</u>	<u>1,000 lb.</u>	<u>1,000 lb.</u>
1927	880	3,368	3,209	7,457
1928	852	2,752	4,371	7,975
1929	1,474	3,973	5,465	10,913
1930	1,328	3,452	6,191	10,971
1931	2,069	2,481	5,689	10,238
1932	22	1,276	726	2,024
1933	10	874	1,634	2,518
1934	1	403	2,320	2,724
1935	602	1,876	3,953	6,431
1936	533	2,416	4,902	7,851
1937	601	2,844	5,426	8,871
1938	205	718	338	1,261
1939	62	500	683	1,245
1940	41	332	2,458	2,831

With Chinese dried eggs once more a minor factor in domestic dried-egg supplies, the egg-drying industry in the United States again started to expand, and in 1938, 6,002,000 pounds were produced. This production was two and a half times larger than that of 1937, when only 2,595,582 pounds were produced. Production showed a further increase in 1939 when it reached an all-time high of 10,039,000 pounds. This output, however, was apparently too large for the industry to handle with ease. With imports of dried eggs up to 2,831,000 pounds in 1940, domestic production dropped to 7,487,000 pounds, which is still a comparatively large production when measured by the average annual output prior to 1938. The trend of domestic dried-egg production is still continuing up and a large output is anticipated in 1941 because of the strong demand not only from domestic users, but also for export to Great Britain.